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(71) Applicant *(for all designated States except US)*: GEN-PROBE INCORPORATED [US/US]; 9880 Campus Point Drive, San Diego, CA 92121 (US).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)* : HOGAN, James, John [US/US]; 2727 First Avenue, San Diego, CA 92103 (US). SMITH, Richard, Dana [US/US]; 3522 Mercer Lane, San Diego, CA (US). KOP, Jo, Ann [US/US]; 1314 Hampton Road, San Marcos, CA 92069 (US). McDONOUGH, Sherrol, Hoffa [US/US]; 4697 Robbins Street, San Diego, CA 92122 (US).

(74) Agents: KENNEY, J., Ernest; 625 Slaters Lane, Fourth Floor, Alexandria, VA 22314 (US) et al.

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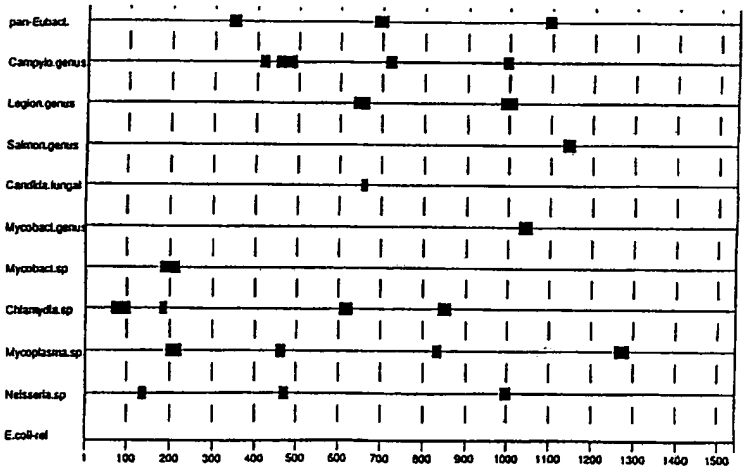


(57) Abstract

A method for preparing probes, as well as several probes for use in qualitative or quantitative hybridization assays. The method comprises constructing an oligonucleotide that is sufficiently complementary to hybridize to a region of rRNA selected to be unique to a non-viral organism or group of non-viral organisms sought to be detected, said region of rRNA being selected by comparing one or more variable region rRNA sequences of said non-viral organism or group of non-viral organisms with one or more variable region rRNA sequences from one or more non-viral organisms sought to be distinguished. Hybridization assay probes for *Mycobacterium avium, Mycobacterium intracellulare,* the *Mycobacterium tuberculosis*-complex bacteria, *Mycoplasma pneumoniae, Legionella, Salmonella, Chlamydia trachomatis, Campylobacter, Proteus mirabilis, Enterococcus, Enterobacter cloacae, E. Coli, Pseudomonas group I, Neisseria gonorrhoeae,* bacteria, and fungi also are disclosed.